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REMARKS

Reconsideration is requested.

The claims have been amended, without prejudice, to advance prosecution. A basis for the Amendment may be found, for example, in the paragraphs spanning page 2, penultimate line through page 3, line 5 of the specification. As noted previously, the presently claimed invention provides a method of reducing the adhesion of microorganisms to the surface to the skin and/or mucous membranes. The presently claimed method does not require the use of antibiotic, bactericidal or fungicidal agents.

The Section 102 rejection of claims 13-17 and 20-22 over Wright (U.S. Patent No. 5,547,677), is obviated by the above amendments. Reconsideration and withdrawal of the rejection are requested as Wright, to the extent it teaches a method of applying a composition to the skin and/or mucous membranes, provides a composition containing antibiotic, bactericidal or fungicidal agents.

Specifically, the compositions of Wright are "antimicrobial oil-in-water emulsions" (see, column 2, lines 45-46). The term "antimicrobial" is used by Wright to describe an ability to inactivate infectious pathogens wherein "inactivate" is further defined as killing or inhibiting growth. See, column 2, lines 55-58 of Wright.

The Examiner is urged to appreciate that the presently claimed invention does not require inactivation, as described by Wright, but rather reducing the adhesion of microorangisms to the surface of the skin and/or mucous membranes.

The applicants further note that Wright includes the use of cationic halogencontaining compounds having a C_{12} - C_{16} chain. The preferred compounds within this group included by Wright is cetylpyridinium chloride (CPC), cetylpyridinium bromide (CPB) and cetyltrimethylammonium bromide (CPAB). See, column 3, lines 10-16 of Wright. Each of these compounds are known antimicrobial agents. See, page 336 of the Merck index, 12 edition, Merck and Company, Inc., Whitehouse Station, New Jersey (1996), copy attached. Accordingly, to the extent Wright may teach application of a composition to the skin and/or the mucous membranes, the composition of Wright fails to inherently or literally teach or suggest a method of reducing the adhesion of microorganisms to the surface of the skin and/or the mucous membranes in the absence of antibiotic, bactericidal or fungicidal agents, as presently claimed. Withdrawal of the Section 102 rejection of claims 13-17 and 20-22 over Wright is requested.

The Section 102 rejection of claims 13-24 over Harbeck (2001/000166) is traversed. Reconsideration and withdrawal of the rejection are requested as Harbeck discloses, at best, compositions which include borax and/or benzoin, each of which is a known antibacterial agent. See, the attached copy of a definition of borax from the website encyclopedia.com printed June 16, 2003 wherein borax is indicated as being a mild antiseptic and cleansing agent; and the attached copy of page 781 of the Merck index defining "gum benzoin" as an antiseptic; and the attached copy of page 114 from Webster's II New Riverside university dictionary (Houghton Mifflin Company, 2 Park Street, Boston, MA 02108 (1994)), defining "antiseptic" as relating to antisepsis which is "the destruction of microorganisms that cause disease, fermentation, or putrefaction." In view of the attached, therefore the applicants respectfully submit that each of the compositions of Harbeck include at least an antibiotic, bactericidal or fungicidal agent and therefore application of any of the compositions according to Harbeck to skin and/or

mucous membranes would not, inherently or literally, provide a method of reducing the adhesion of microorganisms to the surface of the skin and/or mucous membranes, as presently claimed. Withdrawal of the Section 102 rejection of claims 13-24 over Harbeck is requested.

A Section 102 rejection of claims 13 and 21-24 over JP 05186328 is traversed. Reconsideration and withdrawal of the rejection are requested as the composition of the cited document includes "lower alcohol" which, arguably, includes ethanol, methanol and isopropyl alcohol. Each of these lower alcohols, and mixtures thereof, are known bactericidal agents such that the composition of JP 05186328, if applied to the skin and/or the mucous membranes, is unable to literally or inherently provide a method of reducing the adhesion of microorganisms to the surface of the skin and/or the mucous membranes in the absence of antibiotic, bactericidal or fungicidal agents. See, the attached description of chemical disinfection from the website "health.vic.gov.au/ohs/polguide/chemdis.doc" which appears to be from the Australian Government publishing service and was printed June 16, 2003, and includes a description of "alcohol" having a good bactericidal, fungicidal and mycobactericidal activity. Withdrawal of the Section 102 rejection of claims 13 and 21-24 over JP 05186328 is requested.

The Section 103 rejection of claims 13-24 over Wright in view of Harbeck should be withdrawn as the cited documents fail to teach or suggest the presently claimed invention, as described above.

Entry of the above amendments will obviate the outstanding rejections, without raising new issues requiring further search and/or consideration. No new matter has

LEREBOUR et al. Serial No. 09/782,520

been added. Entry of the above amendments and withdrawal of the outstanding rejections are requested.

The claims, as amended, are submitted to be in condition for allowance and a Notice to that effect is requested.

The Examiner is requested to contact the undersigned if anything further is required in this regard.

Respectfully submitted,

NIXON & VANDERHYE P.C.

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THE MERCK INDEX

AN ENCYCLOPEDIA OF CHEMICALS, DRUGS, AND BIOLOGICALS

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borax Trackthis topic

(so 'deem tetrebôr 'at dekehi 'drat) or sodium tetraborate decahydrate , chemical compound, Na $_2$ B $_4$ O $_7$ ·10H $_2$ O; sp. gr. 1.73; slightly soluble in cold water; very soluble in hot water; insoluble in acids. Borax is a colorless, monoclinic crystalline salt; it also occurs as a white powder. It readily effloresces, especially on heating. It loses all water of hydration when heated above 320 and fuses when heated above 740; a "borax bead" so formed is used in chemical analysis (see bead test). Borax is widely and diversely used, e.g., as a mild antiseptic, a cleansing agent, a water softener, a corrosion inhibitor for antifreeze, a flux for silver soldering, and in the manufacture of enamels, shellacs, heat-resistant glass (e.g., Pyrex), fertilizers, pharmaceuticals, and other chemicals. It is sometimes used as a preservative but is toxic if consumed in large doses. Naturally occurring borax (sometimes called tincal) is found in large deposits in the W United States (Borax Lake in Death Valley, Calif.; Nevada; and Oregon) and in the Tibet region of China. Borax can also be obtained from borate minerals such as kernite, colemanite, or ulexite. California is the chief source of borate minerals in the United States.

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Section:

Safe Practice and Environment

P licy No.:

S5.1

Sub-

Infection Prevention & Survelliance

Issue Dat:

February 2001

Section:

CHEMICAL DISINFECTION

Revisi n

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Subject:

N .:

PURPOSE AND SCOPE

The purpose of this policy is to provide NWH network staff with guidelines for the chemical disinfection of instruments and equipment.

POLICY

The Network policy on Chemical Disinfection is:

- All instruments and equipment must be cleaned prior to chemical disinfection to remove any
 particulate matter which may harbour infectious material
- The level of chemical disinfection required must be appropriate for the type of instrument or equipment, its clinical usage and the manufacturer's recommendations
- High level chemical disinfection should only be used when steam sterilisation is unsuitabl, when low temperature chemical sterilisation is either unavailable or is not recommended by the instrument manufacturer, or when thermal disinfection is unsuitable for the device
- Glutaraldehyde formulations should be used with caution, in accordance with the manufacture's directions. Glutaraldehyde should only be used in a well-ventilated area as defined by Worksafe Australia and appropriate personal protective equipment should be worn

PROCEDURE

Disinfectant Group

Antimicrobial Activity

Other Properties/Comments

Alcohol

Good:

- bactericidal
- fungicidal
- mycobactericidal

Variable:

virucidal

Poor:

not sporicidal

Ethanol:

70 % w/w ethanol is rapid acting and dries quickly

90% w/w ethanol is useful as a virucide.

100% ethanol is not an effective disinfectant.

Ethanol is less effective against non enveloped (HBV) viruses than against enveloped (HIV) viruses. **Alcohol** (isopropanol): Effective at 60-70%v/v but has variable mycobactericidal activity.

Not an effective virucide.

General properties of alcohols:

- Does not penetrate organic matter well, acts as a fixative, prior cleaning is required.
- Flammable.
- Can be combined with other bactericidal compounds for skin disinfection.

Aldehydes

Good:

- bactericidal
- fungicidal
- virucidal
- sporicidal slow

Variable:

mycobactericidal

Ineffective:

CJD

Highly irritant.

Acts as a fixative, prior cleaning is required

Penetrates organic material slowly; not inactivated by inorganic materials.

Usually non corrosive to metals.

Buffered alkaline solutions need to be activated prior to use and have limited shelf life.

Acidic solutions more stable, but slower acting; glycolated solutions have shorter kill times.

Instrument disinfectant when used for short periods (10-20 minutes).

Slow acting against atypical mycobacteria.

Chlorhexidine

Good:

- bactericidal gram positive organisms
- less active against gram-negative organisms

Variable:

- virucidal
- fungicidal

Poor:

- not sporicidal
- not mycobactericidal

Low toxicity and irritancy.

Inactivated by organic matter, soap and anionic detergents.

Useful for skin and mucous membrane. disinfection, but is neurotoxic (must not contact middle ear) and may cause corneal damage.

Hypochl rites

Good:

bactericidal

- virucidal
- fungicidal

Variable:

- sporicidal (pH 7.6 buffer)
- mycobactericidal (5000 ppm)

Fast acting.

Inactivated in presence of organic matter at low concentrations.

Incompatible with cationic detergents.

High concentrations corrosive to some metals.

Diluted form unstable.

Decomposed by light heat and heavy metals.

Chlorine gas released when mixed with strong acids.

Carcinogenic reaction product when mixed with formaldehyde.

Useful in food preparation areas and virology laboratories.

lodine Preparations

Good:

- bactericidal
- virucidal
- fungicidal

Variable:

sporicidal

May be inactivated by organic matter.

May corrode metals e.g. aluminum.

Useful as skin disinfectant, but some preparations may cause skin reactions.

Antiseptic strength iodophors are not usually sporicidal.

Peracetic acid

Other peroxygen compounds

Good:

- bactericidal
- virucidal
- fungicidal
- sporicidal

mycobactericidal

Variable:

sporicidal

mycobactericidal
Highly irritant.
Corrosive to some metals.
Reduced activity in the presence of organic matter.
Usually contain detergent.

May be used as an instrument disinfectant if compatible.

May be used as an instrument sterilant under specified conditions if compatible.

Hydrogen peroxide and potassium, monoperoxygen sulfate have low toxicity and irritancy.

Phenolics

Good:

- bactericidal
- mycobactericidal
- fungicidal

Variable:

virucidal

Poor:

non enveloped viruses

Avoid contact with skin/mucous membranes.

Stable in presence of organic matter.
Incompatible with cationic detergents.

Not for use on food preparation surfaces/ equipment.

Detergent usually included.

Absorbed by rubber and plastics.

Diluted form unstable.

FURTHER INFORMATION

Infection Control Service.

National Health and Medical Research Council. 1996. Infection control in the health care setting. Canberra: Australian Government Publishing Service.

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- sporicidal

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sporicidal

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word history: Abov board. It is recorded as e if the gambler's hands presumably he could no in other forms of chear

Usage Guidanc You'll find two kir usage notes are in p oblem terms in In addition, a sect plains in detail sc confusing questic In the main part (

all right adv. L Satis rect < Your conclusio 5. Without a doubt < not acceptable to write

an-ti-mo-ni-al (ān'tə-mô'nē-al) adi. Of or containing antimony.

-n. A medicine containing antimony.

antimony (in'to-mo'ne) n. [ME antimonie < Med. Lat. antimonium.] Symbol Sb A metallic element used in a wide variety of alloys, esp. with lead in battery plates, and in paints, semiconductors, and ceramic products, atomic number 51, atomic weight 121.75.

antimony glance n Stibnite.
antimony planete (in'te ne's-plastik) adi. Suppressing the growth or expansion of neoplasms.

an ti neu tri no (in te noo tre no, nyoo) n. pl -nos. The antiparticle of the neutrino.

an-ti-neu-tron (an'te-noo'tron', -nyoo'-) n. The antiparticle of the neutron. an-ti-node (in'ti-nod') n. The point or region of greatest amplitude

between adjacent nodes an-ti-no-mi-an (in'd-nô'mē-an) n. [Med. Lat. antinomus : Gk. anti-, against + nomos, law.] A member of a Christian sect believing

that faith alone is necessary to salvation. -an'ti-no'mi-an adj. an'ti-no'mi-an-ism n an-tin-o-my (ān-tin'o-mė) n., pl. -mies. [Lat antinomia < Ck. : anti- against + nomos, law.] 1. An apparent contradiction between

valid principles or conclusions that seem equally necessary and reasonable. 2. A contradiction, opposition, or conflict.

an-ti-nov-el (in'te-nov'al) n. A novel lacking traditional features of a work of fiction, as coherent structure and character development. —an'ti-nov'el-ist n

an-ti-nu-cle-on (an'te-noo'kle-on', -nyoo'-) n. The antiparticle of a nucleon.

an-ti-ox-i-dant (an'te-ok'si-dant) n. A chemical substance that inhibits oxidation.

an-ti-par-ti-cle (an'te-par'ti-kal) n. A subatomic particle, as a positron, antiproton, or antineutron, having the same mass, average lifetime, spin, magnitude of magnetic moment, and magnitude of electric charge as the particle to which it corresponds but having the opposite sign of electric charge, opposite intrinsic parity, and opposite direction of magnetic moment.

antipas to (in'té-pas'ti) n., pl. -tos or -ti (-té) [ital. : anti-, be-fore (< Lat. ante) + pasto, food < Lat. pastus < pascere, to feed.] An appetizer usu, including cheese, smoked meats, fish, and vegetables,

served with oil and vinegar.
antipathetic (in-tip's-therik) also antipathetical (-I-kai) adi. 1. Having an inherent feeling of aversion, repugnance, or

opposition. 2 Causing antipathy —antipather ically adv.
antipathy (in-tipathe) n. pl. thies. [Lat antipathia < Gk. antipartiny (an-up s-ue) a. pr. series. [Las antiparties anti- against + pathos, feeling] 1. A strong feeling of aversion, repugnance, or opposition. 2. An object of aversion. antiperiod (an'te-pire-od'lk) adj. Preventing regular recurrence of fever or disease. — An antiperiodic drug.

antipersonnel (an'té-pur's-nél') adj. Designed to injure or kill the military personnel or civilian population of an enemy country. an-ti-per-spi-rant (an'te-pur'spor-ont) n. A preparation applied esp. to the underarms to decrease or prevent excessive perspiration. an-ti-phio-gis-tic (in'te-fla-jis'tik) adj. Reducing inflammation or fever. -an'ti-phlo-gis'tic n.

an-ti-phon (in'to-fon') n. [Fr. antiphone < Med. Lat. antiphona. sung responses. -see ANTHEM.] L A devotional composition sung responsively as part of a liturgy. 2. A short liturgical text chanted

an tiph onary (in-tif's nere) n., pl. -ies. A bound collection of

antiphony (intifone) n., pl. -nies L Responsive singing or chanting 2 ANTIPHON 1. 3. One that answers or echoes another.

an-tip-o-dal (in-tip's-dal) adj. 1. Of, relating to, or located on the opposite side or sides of the earth. 2. Diametrically opposed. an-ti-pode (an'ti-pod') n. [Back-formation from ANTIPODES.] A di-

rect opposite an-tip-o-des (in-tip's-dez') pl.n. [ME < Lat. < Gk. < antipous, with the feet opposite : anti-, opposite + pous, foot.] 1. Two places or regions on opposite sides of the earth. 2 (sing. or pl. in number).

One that is the exact opposite of another. one that is the exact opposite of another.

antipol·lution (in'te-p-loo'shan) adi. Intended to counteract or eliminate environmental pollution.—an'ti-pol·lu'tion-ise n.

anti-pope (in'ti-pôp') n. [ME < Med. Lat. antipapa : Lat. antipoposed to + papa, pope.] One claiming to be pope in opposition to the one chosen by church law.

antipoverty (an'te-povarte) adi. Intended to alleviate poverty.
antiproton (an'te-provon') n. The antiparticle of the proton.

an-tipy-ret-ic (in'te-pi-rer'ik) adi. Reducing fever. pyretic drug or agent. -an'ti-py-re'ais (-re'sis) n.

anti-py-rine (an'te-pi'ren') n. [Orig. a trademark.] A white powder, C₁,H₁,N₁O, used to reduce pain and fever.

anti-quari-an (an'ti-kwar'e-an) adj. 1. Of or relating to antiquaries or the study of antiquities. 2. Dealing in or concerning rate

old books. —n. An antiquary. —an'ti-quar'i-an-ism n. anti-quark (ān'tē-kwork') n. The antiparticle of a quark. antiquary (an'ti-kwer'e) n. pl. -ies. [Lat. antiquarius < anti-quus, old.] A student of or dealer in antiquities.

antiquate (in'ti-kwit') vt. quated, quating, quates [
antiquate, antiquat, to leave in an old state < antiquus, old] make old-fashioned or obsolete. -an'ti-qua'tion n

an-ti-quated (an'ti-kwa'tid) adi. L So old as to be useless or to suitable : OBSOLETE 2. Very old : ACED. -an'ti-quat'e an-tique (in-tek') adi. [Fr. < Lat. antiquus old.] 1. Of, pertain to, or belonging to ancient times. 2. Belonging to, made in, or typin to, or belonging to ancient times. z. Belonging to, made in, or typing of an earlier period. 3. Old-fashioned.—n. An object having specially because of its age, esp. a work of art or handicraft more than 100 years old.—vt. -tiqued, -tiqueing, -tiques. To give the appearance of an artistate of the appearance of the artistate ance of an antique to. -an-tique ly adv. -an-tique nes an-tiquer (In-te kar) n. One who treats or finishes new furnit

so as to make it appear antique.

antiquity (anti-wi-te) n., pl. -ties. 1. Ancient times, esp. to
times before the Middle Ages. 2 The people, esp. the writen, o
ancient times. 3. The quality or state of being old or ancient. 4. ofter
ancient times. antiquities. Something, as a relic, belonging to or dating from as

cient times an-ti-ra-chit-ic (an'te-ra-kit'ik) adj. Preventing or treating ricke

n. An antirachitic drug or food. an-tir-rhi-num (ān'tə-n'nəm) n. [NLat., genus name < Gk ami rhinon : anti-, counterfeiting + rhis, nose.] A plant of the gen Antirrhinum, as a snapdragon.

an-ti-scor-bu-tic (an'te-skôr-byoo'tik) adj. Preventing or treat scurvy. —n. An antiscorbutic food or drug.
anti-Semrite (an'te-sem'lt') n. One who discriminates agains o

is hostile to or prejudiced against Jews. -an'ti-Se mit'ic (-sami ik) adj. -an'ti-Sem'i-tism n.

anti-sepsis (in'ti-sep'sis) n. The destruction of microorganism

that cause disease, fermentation, or putrefaction.
anti-septic (in'ti-sep'tik) adi. 1. Of, relating to, or designation antisepsis. 2. Capable of producing antisepsis. 3. Entirely clean. 4 Do void of enlivening or enriching qualities. 5. Impersonal. —n. An in tiseptic drug or agent. —an tiseptic drug or agent.

anti-serum (an'ti-sir'sm) n., pl. -rums or -ra (-rs). Human of animal serum having antibodies for at least one antigen.

an-ti-slav-ery (an'tē-slav-rē, slav rē) adi. Opposed to slaver -an'ti-slav'ery n.
an-ti-smog (in'te-smog', -smog') adj. Counteracting or eliminating

anti-so-cial (in te-so'shal) adi. 1. Avoiding the society of others UNSOCIABLE. 2. 2. Opposed to the established social order. b. Chame terized by or engaging in behavior that violates conventional mo -an'ti-so'cial-ly adv.
an-ti-spas-mod-ic (ăn'tē-spāz-mod'lk) adj. Alleviating or preven

ing spasms. —a. An antispasmodic drug antistatic (in testivik) also antistat (-testiv) adj. Preve

ing or inhibiting the build-up of static electricity.

antistrophe (antistrofe) n. [Llat. < Gk. antistrophé, a rumin back < antistrophenin, to rum back: anti-, back + strephein, rum.] 1. The movement following and in the same meter as the strephein of the same meter as the strephein of the same meter as the same meter as the strephein of the same meter as the same meter as the strephein of the same meter as the same meter a strophe in ancient Greek choral poetry or drama, sung while the chorus moves in the opposite direction from that of the stroph 2. The second stanza in a poem having alternating stanzas in castrasting metric form. —an'ti-stroph'ic (àn'ti-strof'ik) adj. —an'ti-stroph'ic

stroph'i-cal-ly adv. anti-sub-marine (in'të-sub'm>rën', sub'm>rën') adi. U against enemy submarines.

an-ti-tank (ān'tē-tāngk') adi. Designed for combat against armo vehicles, esp. tanks.

an tith sis (an tith I sis) n. pl. ses (sez) [Llat < Gk., opposition < antitithensis (an tithensis ostition < antitithensis to oppose : anti. against + tithensis to set 1. Direct contrast: Opposition. 2. The direct opposite. 3. a. The just the contrast opposition. taposition of sharply contrasting ideas in balanced or parallel wo phrases, or grammatical structures, e.g., Milton's "He for God only she for God in him." b. The second and contrasting part of such juxtaposition. 4. The second stage of the dialectic process.

antithetical (antithetikal) also antithetic (-ik) a [List antitheticus. Ck. antithetikos < antitethenai, to oppose. ANTITHESIS.] 1. Relating to, like, or characterized by antithesis. 2. In rectly opposed. —an'ti-thet'i-cal-ly adv.
anti-tox-ic (in'te-tok'sik) adi. 1. Counteracting a toxin or poisa

2. Of or relating to an antitoxin.

an-ti-tox-in (an'te-tôk'sin) n. L An antibody formed in respe to and capable of neutralizing a biological poison. 2 An animal rum containing antitoxins.

antitrades (in'ti-tradz') pl.n. The westerly winds above the winds of the tropics, which become the westerly winds of the middle antitrust (in te-trust) adi. Opposing or regulating trusts, care

or similar business monopolies.
antitumor (in'ti-too'mar, -tyoo'-) also antitumor (-mar-al) adi. Anticancer.

apat apay ircare afather epet ebe hwwhich i ir pier o pot o toe o paw, for oi noise oo p

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right adv. L. Satisfactory
rect < Your conclusions are all right > 3. Office of the State of the all right adv. 1. Satisfactory

Crystals from methanol, melts over a range of 200-280°. Hydrochloride, C₁₁H₂₂NO₄.HCl, DV-1006, Neuer. Crystals from methanol/ether, mp 238-240°. THERAP CAT: Antiulcerative.

2068. Cetrimonium Bromide. N.N.N-Trimethyl-1-hexadecanaminium bromide; hexadecyltrimethylammonium bromide; cetyltrimethylammonium bromide; Bromat; Cetab; miae; cetyltrimethylammonium bromide; Bromat; Cetab; Cetavlon; Cetylamine; C.T.A.B.: Lissolamine V; Micol; Quamonium. C₁₉H₄₂BrN; mol wt 364.45. C 62.62%, H 11.62%. Br 21.92%. N 3.84%. [CH₃(CH₂)₁₅N(CH₃)₃]Br. Prepd from cetyl bromide and trimethylamine: Shelton et al. J. Am. Chem. Soc. 68, 753 (1946). Toxicity and pharmacology: B. Isomaa, K. Bjondahl, Acta Pharmacol. Toxicol.

Crystals, mp 237-243°. Soluble in about 10 parts water. 47, 17 (1980). Freely sol in alc; sparingly sol in acetone. Practically insol in ether, benzene. Stable in acid soln. LDg, in mice, rats (mg/kg): 32.0, 44.0 i.v. (Isomaa, Bjondahl).

p-Toluenesulfonate analog, C26H49NO3S, cetrimonium

Note: Cetrimide is a mixture consisting chiefly of tetratosylate, Cetats. decyltrimethylammonium bromide together with smaller amounts of dodecyltrimethylammonium bromide and cetrimonium bromide.

USE: As cationic detergent and antiseptic; as laboratory reagent.

THERAP CAT: Antiseptic (topical).

THERAP CAT (VET): Antiseptic, cleansing agent.

2069. Cetrimonium Stearate. N,N,N-Trimethyl-1-hexa decanaminium octadecanoate; hexadecyltrimethylammonium stearate; cetyltrimethylammonium stearate; trimethylhexastearate; cetyltrimethylammonium stearate; trimethylhexadecylammonium stearate; Arquad 16 stearate; Dynafac. C₃₇H₇₇NO₂; mol wt 568.02. C 78.24%, H 13.66%, N 2.47%, O 5.63%. [CH₃(CH₂)₁₆COO][CH₃(CH₂)₁₈N(CH₃)₃]. Prepri: Gautier et al., Bull. Soc. Chim. France 1955, 634. Solid, mp 142-143°. Practically insol in water, alcohol.

Note: The commercial product, a waxy solid, also contains other alkyltrimethylammonium stearates, since the hexadecyl chain is derived from soybean fatty acids.

2070. Cetyl Alcohol. 1-Hexadecanol; ethal; ethol; palmityl alcohol. C₁₆H₂₀O; mol wt 242.45. C 79.27%, H 14.14%, O 6.60%. CH₃(CH₂)₁₆CH₂OH. Discovered by Chevreul in 1813. Obtained from spermaceti by saponification. tion: Spada, Gavioli, Farm. Sci. e Tec. (Pavia) 7, 435 (1952), C.A. 47, 891c (1953). Prepn from palmitoyl chloride + NaBH₄: Caikin, Brown, J. Am. Chem. Soc. 71, 122 (1949); from methylthiopalmitate + Raney Ni: Ruzicka. Prelog, U.S. pat. 2,509,171 (1950 to Ciba); from hexadecyl bromide: Levine. Clippinger, U.S. pat. 3,018,308 (1962 to California P. Com.)

California Res. Corp.).
White crystals. d 0.811. mp 49°. bp 344°; bp₁₅ 190°. n_b°
1.4283. Practically insol in water. Sol in alcohol, chloro-

Note: The hexadecyl alcohol developed by Esso Res. & form, ether. Eng. Co. for cosmetics is a liquid, primary, branched chain, C₁₆ alcohol, made up of an array of isomeric compds maintained in constant proportion by a complex manufacturing process (not from spermaceti): Edman. Lowden. Drug Cosnet. Ind. 93, 631 (Nov. 1963). Liquid. 43, 0.842. bp. 195-205. Freezes at < -60°. Miscible with most alcohols. glycols, esters, ketones, cosmetic oils and aromatics. miscible with water.

USE: In cosmetics as emollient, emulsion modifier, coupling agent. Pharmaceutic aid (emulsifying and stiffening agent).

2071. Cetyldimethylethylammonium Bromide. N-Ethyl-N.N-dimethyl-1-hexadecanaminium bromide; ethylhexadecyldimethylammonium bromide; ethyl cetab: CDA: Ammonyx DME: Bretol. C20H44BrN: mol wt 378.48.

63.47%, H 11.72%, Br 21.11%, N 3.70%. Cationic gen dal detergent. Prepn and antibacterial activity: R. S. ton et al., J. Am. Chem. Soc. 68, 753 (1946).

White powder, mp 178-186°. Soluble in water, alcoslightly sol in chloroform, benzene, ether. LD₅₀ orally rats: 500 mg/kg, RTECS Vol. 1, R. J. Lewis, R. L.Tat Eds. (1979) p 107.

USE: Disinfectant; laboratory reagent. THERAP CAT: Antiseptic (topical).

THERAP CAT (VET): Antiseptic (topical).

2072. Cetyl Lactate. 2-Hydroxypropanoic acid i decyl ester; 1-hexadecanol lactate; lactic acid cetyl ester; 1-hexadecanol lactate; lactic acid cetyl ester; tic acid hexadecyl ester; Ceraphyl 28. C₁₉H₃₀O₃; mod 314.51. C 72.56%, H 12.18%, O 15.26%. CH₃CHO COOC₁₆H₃₃. Preparation: Rehberg, Marion, J. Am. Cooc₁₆C, 1918 (1950).

Waxy solid. mp 41°. bp_{0.1} 132°; bp₁ 170°; bp₁₀ 219°.

1.4410; ng 1.4370. USE: Non-ionic emollient. To improve feel and textus cosmetic and pharmaceutical prepns.

2073. Cetyl Palmitate. Hexadecanoic acid hexa ester; palmitic acid hexadecyl ester; hexadecyl palmitate ester; paiming acia nexadecyl ester; nexadecyl paimintate. H₆O₃; mol wt 480.86. C 79.93%, H 13.42%, O 6.6 CH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(CH₂)₁₄COOCH₃(COOCH₃)₁₄COOCH₃ oxidation of cetyl alcohol: Cymerman-Craig, Horning Org. Chem. 25, 2098 (1960). Biosynthesis using inocula Nocardia salmonicolor: Davis, U.S. pat. 3,169,099 (196

Monoclinic leaflets, mp 54°. d²⁰ 0.989. n₀²⁰ 1.4398. Socony Mobil Oil). tically insol in water. Sol in abs alc, ether.

2074. Cetylpyridinium Chloride. 1-Hexadecylpyliam chloride; Ceepryn; Cepacol: Dobendan; Media Merocet; Pristacin; Pyrisept. C₂₁H₃₆ClN; mol wt 339.97 (1984), H 11.27%, Cl 10.43%, N 4.12%. Pharmacoloxitoxicology: J. Pharmacol. Exp. Ther. 74, 401 (1942), view of early literature: C. L. Huyck, Am. J. Pharm. 11 (1944). Toxicity data: J. W. Nelson, S. C. Lyster, L. Pharm. Assoc. 35, 89 (1946). 1-Hexadecylpy Pharm. Assoc. 35, 89 (1946).

Monohydrate, Halset. White powder, mp 77-83°, sol in water, alcohol, chloroform; very slightly sol in ene, ether. pH (1% aq soln): 6.0 to 7.0. Surface (25°): 43 dyn/cm (0.1% aq soln); 41 dyn/cm (1.0%). LD₅₀ in rats (mg/kg): 250 s.c.; 6 in the control of the c

USE: Pharmaceutic aid (preservative).

THERAP CAT: Antiseptic; disinfectant. THERAP CAT (VET): Topical antiseptic; disinfectant

2075. Cevadine. [3β(Z), 4a, 16β]-4, 9-Epoxycevall [12,14,16,17,20-heptol 3-(2-methyl-2-butenoate); version [13,14], NO; mol wt 591.74. C 64.95%, H 8.35%, N. C₃₃H₄₉NO; mol wt 591.74. C 64.95%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.95%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.95%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.35%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.35%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.35%, H 8.35%, N. C₃₄H₄₉NO; mol wt 591.74. C 64.95%, H 8.35%, H 8.3 & Cham.) A. Gray (Sabadilla officinarum Brandti-ceae: Poetsch et al. J. Am. Pharm. Assoc. 38, 525. Ringel, ibid. 45, 433 (1956). Evaluation as installation and the state of Ikawa, Link et al. J. Biol. Chem. 159, 517 (1945). ture: Kupchan, Alfonso, ibid. 49, 242 (1960). study: Swiss, Bauer, Proc. Soc. Exp. Biol. Med. (1951). Review: Wintersteiner in Graff, Essays: chemistry (Wiley, New York, 1956) pp 308-321.

nonohydrate, C₁₀H₁₂N₅O₈PNa, Rodecomp at about 250°. Charnolar absorbancy): 13.7 × 10° n water at 25° about 25 g/100 mb hol, acetone, ether. um salt as flavor intensifier, like

im glutamate. Said to be more

Principal polysaccharide fro ds. Cyamopsis tetragonaloba (L)s ne, Whistler. J. Am. Chem. Soc. Whistler, Durso, ibid. 74, 51400 oleske, Kurath, J. Polymer Sci. Deuel et al., Chimia 8, 64 (19

aOH). Sol in cold water. is material, mp 226-227. Can be which can be elongated 550%. es not develop crystallinity. nd paper industry.

Guar flour; gum cyamop onite V-7-E; Jaguar; Decorpa: C 1. Mol wt about 220,000. imopsis tetragonolobus (L.) Tend ultivated in India as livestock ion (85%) of guar flour is called linear chains of (1-4)-3-D-1 x-D-galactopyranosyl units atta tatio of D-galactose to D-manutabolism: D. J. A. Jenkins 979); on glucose and lipid lend olunteers: U. Smith, G. Hola Ire.) 45, 1 (1982); on renal to Chin et al., Biomed. Res. 5, 27, in patients with non-insulin (clvor et al., Am. J. Clin. Nurses studies: S. L. Graham et al., 27 (1981) 37 (1981). Comprehensive tgomery, The Chemistry of Industrial Gums, R. L. Jew York, 2nd ed., 1973) p wder. Completely sol in 🗢 insol in oils, greases, hydrocal er solns are tasteless, odorle ent gray color, and neutral ight times the thickening pow e converted to a gel by small sions are neutral. Cf. "A C cially Available Guar Gum Bartilucci. Drug Standards 1 ale, female rats (g/kg): 7.35

izing; as a protective colle 1 forming agent for cheese :ps; as a binding and disint ons; in pharmaceutical jelly ulsions, lotions, creams, to y as a flocculant, as a file a coagulant aid.

djunct to diet, insulin or of diabetes.

Green B. N-Ethyl-N-[4-[]4nino]phenyl]phenylmethyli

-1-ylidene]-3-sulfobenzenemethanaminium inner Salt C.I. Acid Green 3; C.I. Food Green 1; FD Green 1; C.I. 42085. C₃₇H₁₅N₁NaO₅S; mol wt 690.82. H 5.11%, N 4.06%, Na 3.33%, O 13.90%, S Prepri: Jones et al., J. Assoc. Offic. Agr. Chem. 38, (1955). Toxicity studies: F. C. Lu, A. Lavalle, Can. 197, 30 (1964); W. H. Hansen et al., Food Cosmet. 389 (1966). See also: Colour Index vol. 4 (3rd 971) p 4385.

dark green powder, or a bright, crystalline solid. water to a green soln which becomes brownish-yellow of HCl and blackish-green with NaOH. An excess OH decolorizes the soln. Sparingly sol in alcohol; it is in concd H₂SO₄ to a yellow soln which, when diwater, turns first yellowish-red, then green. LD 50 water, turns first yellowish-red, then green. LD₅₀ in arts: >2 g/kg (Lu, Lavalle).

Limited use as a dye for silk and wool fabrics; as

stain. Delisted by FDA in 1966 for use in foods. and cosmetics.

h. p-Gulonic Acid. C₆H₁₂O₇, mol wt 196.16. C **h** 6.17%, O 57.09%. Prepd as the sodium salt by of sodium glucuronate with sodium amalgam in Redium: Fischer, Piloty, Ber. 24, 525 (1891); from acid y-lactone: Rehorst, Naumann, ibid. 77, 24

(10 min) - -38.6° (15 days). The free acid lectone spontaneously. pK (25°): 3.68. salt, C₆H₁₁NaO₇, crystals. [a]²⁰ +11.5°. Sol in

salt. $Ca(C_6H_{11}O_7)_T$ $[\alpha]_0^{21}$ -14.45° (c = 1.73). If from aq soln by alc.

U-Galonic Acid. Xylosecarboxylic acid. C₆H₁₇-196.16. C 36.74%, H 6.17%, O 57.09%. Prepd and HCN followed by hydrolysis of the niss. Stahel, Ber. 24, 529 (1891). Prepn from D-196. C 196. Stahel, Ber. 24, 529 (1891). acid: Ger. pat. 618,907 (1935 to Hoffmann-La cid: Ger. pat. 618,907 (1933 to riolinia...).

13, 173 (1965).

13, 173 (1965).

the lactone on evapn of an aq soln.

The lactone on evapn of an aq 3011.

| Call | 12.7° (c = 9). Freely sol in water.

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| Call | 12.7° (c = 9). Freely sol in water. of the γ -lactone of D-gulonic acid: Fischer,

Stahel, Ber. 24, 532 (1891); van Ekenstein. Blanksma, Rec. Tray. Chim. 27, 3 (1908). Alternate synthesis: Meyer zu Reckendorf, Angew. Chem. Int. Ed. 6, 177 (1967); idem, Methods Carbohyd. Chem. 6, 129 (1972); R. Köster et al., Angew. Chem. Int. Ed. 19, 547 (1980).

Syrup. Sweet taste. $[\alpha]_0^{20} = 20.4^{\circ}$. Sol in water, slight sol in alcohol. Not fermentable by yeast.

4607. L-Gulose. C₆H₁₂O₆ mol wt 180.16. C 40.00%, Prepd by sodium amalgam reduction H 6.71%, U 53.28%. Prepd by sodium amaigam reduction of an acid soln of the y-lactone of L-gulonic acid: Fischer, Piloty, Ber. 24, 526 (1891). See also van Ekenstein, Blanksma, Rec. Trav. Chim. 27, 3 (1908): Levene, LaForge. J. Biol. Chem. 20, 430 (1915): Talen, Rec. Trav. Chim. 44, 891 (1925): Isbell, J. Am. Chem. Soc. 55, 2167 (1933). Synthesis from D-mannose: Evans, Parrish. Carbohyd. Res. 28, 359 (1973): from Degluces. D. K. Minster, S. M. Hecht, J. Opp. (1973); from D-glucose: D. K. Minster, S. M. Hecht. J. Org. Chem. 43, 3987 (1978).

Syrup. $[\alpha]_D^{20}$ +61.6°. $[\alpha]_D$ +21.3° (c = 4.58) (Evans. Parrish). Freely sol in water; slightly sol in alcohol. Not fermentable by yeast.

4608. Gum Benzoin. Resin benzoin; resin benjamin: gum benjamin. Balsamic resin from Styrax benzoin Dryand., known as Sumatra benzoin, or from S. tonkinensis (Pierre) Craib. Styracaceae, or other species of Styrax known as Siam benzoin. Habit. Thailand, Cambodia, S. Vietnam, Sumatra, Java, and Sunda Islands. Constit. Ethereal oil, free and combined benzoic and cinnamic acids up to 39%, vanillin, coniferyl benzoate, resin (a mixture of benzoresinol and benzoresinotannol) esterified with benzoic acid, styrol, styracin. Not less than 90% of Siam and not less than 75% of Sumatra benzoic is sol in alc (U.S.P.). Ref: Reinitzer, Arch. Pharm. 264, 131 (1926): Brans, Pharm. Weekbl. 73,

374 (1936); Freudenberg, Bittner, Ber. 83, 600 (1950).
USE: Preserving ointments; preparing natural benzoic acid; for fumigating pastilles; in perfumery and cosmetics.

THERAP CAT: Topical protectant.
THERAP CAT (VET): Tincture is used topically as an antiseptic and to promote healing; as an inhalant for bronchitis. and orally as an expectorant.

4609. Gum Tragacanth. Tragacanth. Mol wt about 840,000. The dried gummy exudation from Astragalus gummifer Labill. (white gavan) or other Asiatic species of Astragalus, Leguminosae, found largely in Iran, also in Asia Minor and in Syria. When mixed with water gives a soluble fraction, as a hydrosol, called tragacanthin which is a complex mixture of polysaccharides containing D-galacturonic acid, other sugars, and traces of starch and cellulose. The insoluble fraction swells to a gel and consists of 60-70% insoluble fraction swells to a gel and consists of 60-70% bassorin, q.v. Structural studies: Norman. Biochem. J. 25, 200 (1931); James. Smith. J. Chem. Soc. 1945, 739, 749; Aspinall, Baillie, ibid. 1963, 1702, 1714. Reviews: Beach. in Natural Plant Hydrocolloids. Advances in Chemistry Series 11 (A.C.S.. Washington, 1954) pp 38-44; Meer et al. in Industrial Gums. R. L. Whistler, Ed. (Academic Press. New York, 2nd ed., 1973) pp 289-299. Book: F. Smith. R. Montgomery. The Chemistry of Plant Gums and Mucilages (Reinhold, New York, 1959) 627 pp.
Odorless. Insipid, mucilaginous taste. Acid reaction.

Odorless. Insipid, mucilaginous taste. Acid reaction. One gram requires 0.9 ml 0.1N NaOH for neutralization to phenolphthalein: Gabel. J. Am. Pharm. Assoc. 23, 341 (1934). Viscosity of tragacanth mucilages is reduced by adding acid. alkali. and NaCl particularly if the mucilage is heated: Mantell. The Water-Soluble Gums (New York.